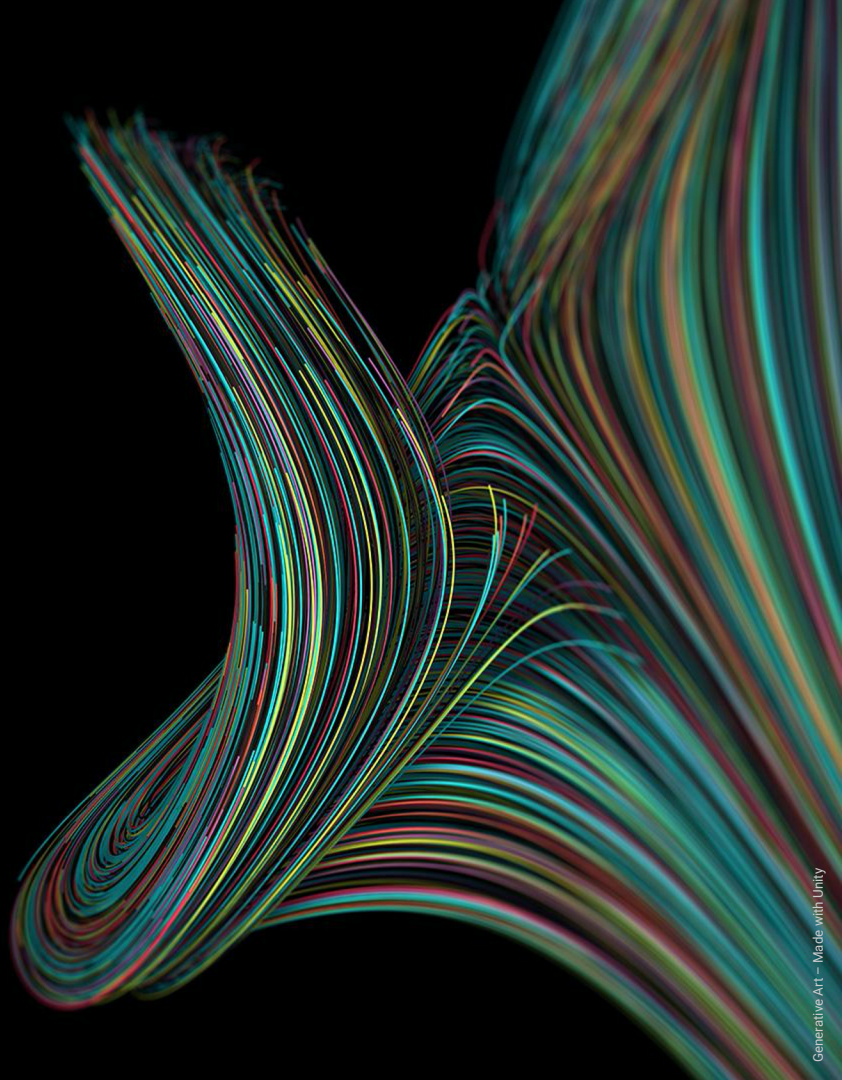


Unity ML-Agents 2020 Update

Danny Lange
VP of AI
Unity Technologies



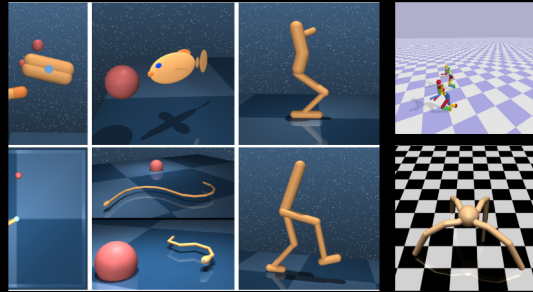


Unity ML-Agents

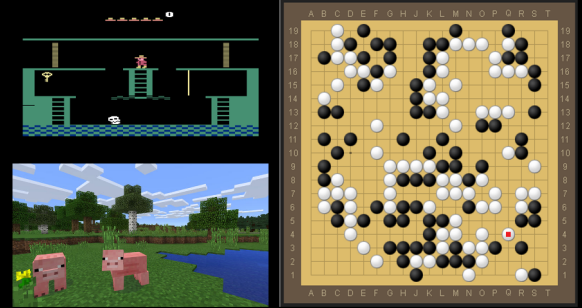
AI Game Environments



Visual



Physical

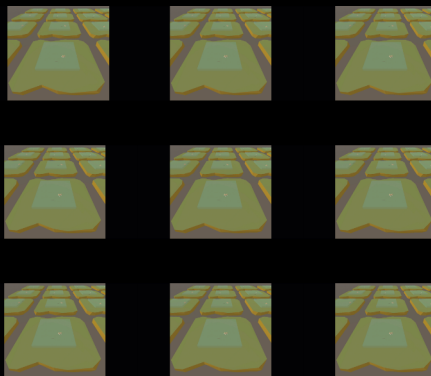


Cognitive

Build Your Own with Unity ML-Agents



Build



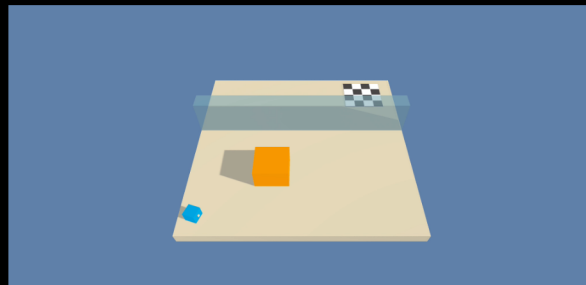
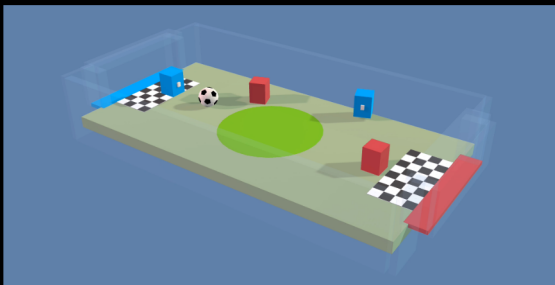
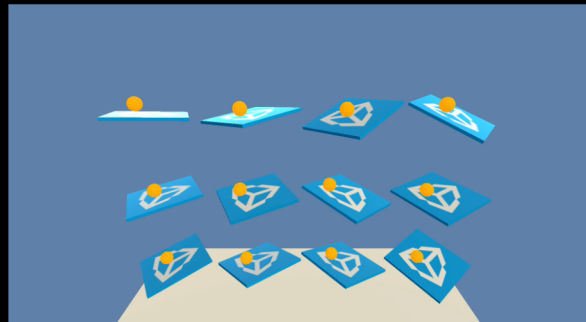
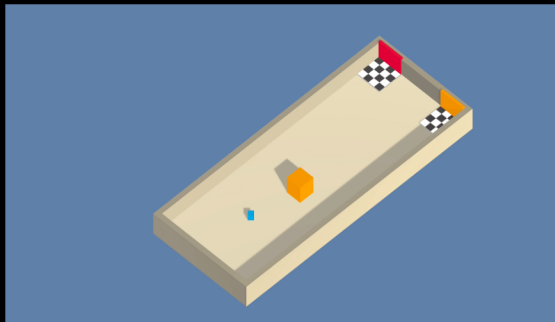
Train



Embed

ML-Agents Training Environments

- Basic
- 3D Balance Ball
- Grid World
- Tennis
- Push Block
- Wall Jump
- Reacher
- Crawler
- Banana Collector
- Hallway
- Bouncer
- Soccer Twos



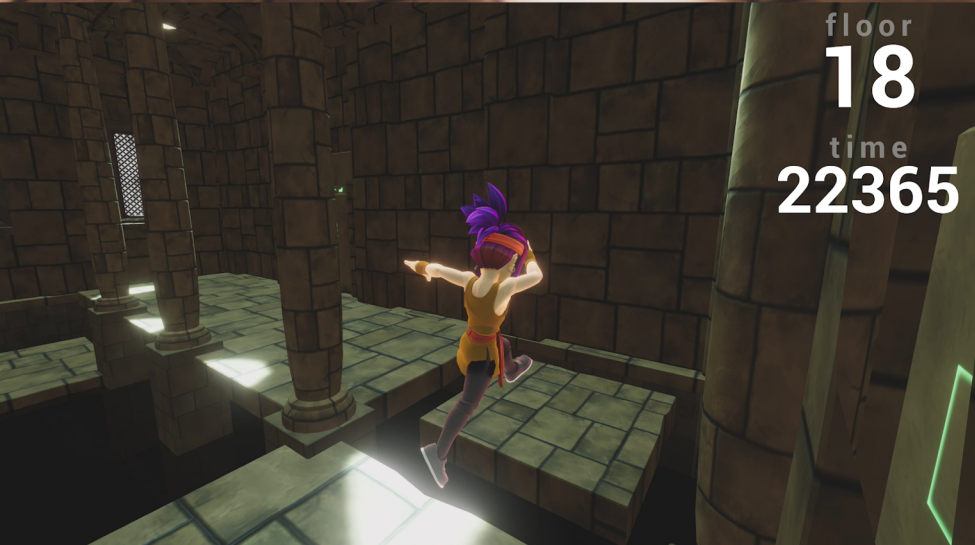
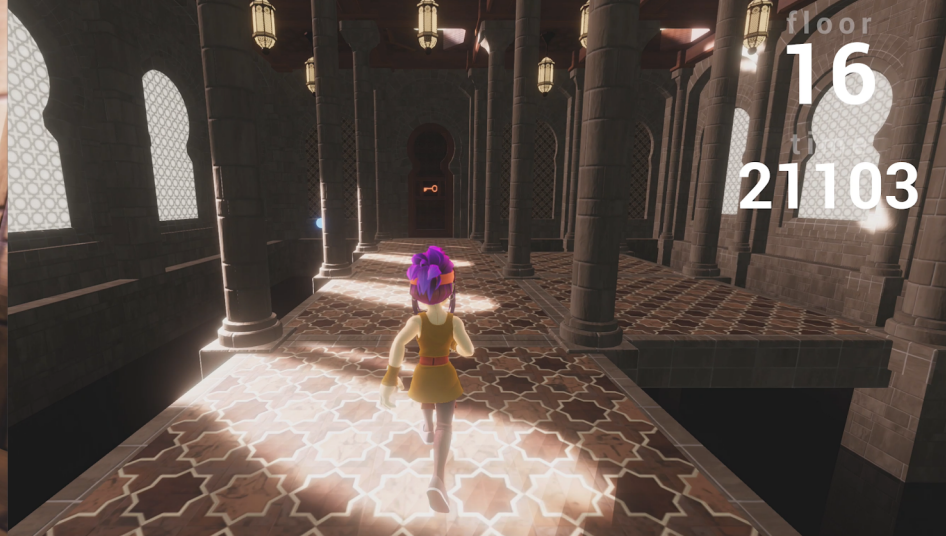
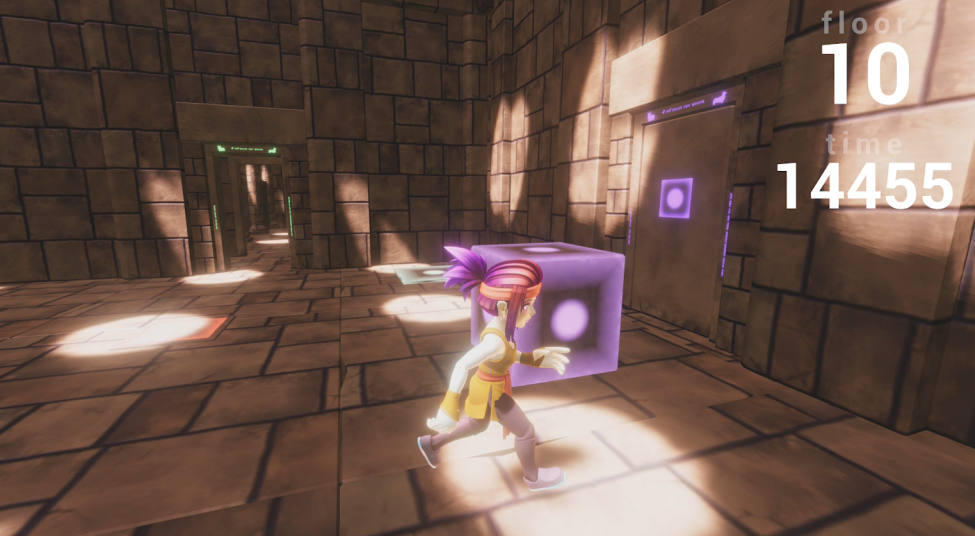


Get ML-Agents at GitHub Now
github.com/Unity-Technologies/ml-agents

Contact Us
ML-Agents@Unity3d.com



Obstacle Tower



History of the OT Challenge

- February 18, 2019: Launched 1st qualifying round on AICrowd with Google Cloud Platform as co-sponsor
- Qualifying round participation: 2000+ entries from 350+ teams
- May 15, 2019: 2nd round launched
- August 7, 2019: Winners announced and OT open-sourced



Learnings...

Winner: Alex Nicol

- Classifier for object identification
- Imitation Learning
- PPO (Proximal Policy Optimization) for fine-tuning behavior

2nd: Gianni & Miha

- PPO with modifications
- Sampling algorithm
- 10 Billion steps sampled

3rd: Songbin Choi

- Standard PPO
- Human Play experience added



Get the Obstacle Tower Environment here

github.com/Unity-Technologies/obstacle-tower-env

github.com/Unity-Technologies/obstacle-tower-source

Publications

Unity: A General Platform for Intelligent Agents

<https://arxiv.org/abs/1809.02627>

Obstacle Tower: A Generalization Challenge in Vision, Control, and Planning

<https://arxiv.org/abs/1902.0137>

@danny_lange 

dannylange 

Thank You

unity3d.ai